(AD-75)

Raber

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: July 14, 1987 *File Ref:* 2100

To: Craig Karr ADM/5

From: Jim Raber

Subject: Mud Lake Conceptual Management Plan

The attached is a completed conceptual element for the Mud Lake Management Plan. A rough draft of this plan has been circulated amongst Lake Michigan District Resource Management Staff, and our Environmental Impact Coordinator. Their comments have been incorporated into this draft.

I have attached our district master plan comment sheet so you may see which people had an opportunity to review the draft. We are prepared to discuss any questions you may have regarding this plan, and look forward to assisting you in its final stages of approval.

cc. Bob Deer

enc.

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date:

File Ref: 2100

To: Master Plan Reviewers

Date of Routing 5-4-87

From: Charles E. Higgs

Subject: Master Plans - District Staff Review

With the high priority being placed on Master Planning it is important that all Resource Management and Environmental Impact District Staff people give a meaningful review of all plans we forward to Madison.

I am asking you to give careful consideration while reviewing this plan. If time does not permit you to get at it soon, move it along and do not sign off, it will come back to you. The office of District Director should be the last to see it. I expect the total review time to be less than 30 working days.

This letter will accompany all plans to the Division Administrator so the responsible bureau in Madison will know who has seen it and what their comments were.

MASTER PLAN Mud Lake Wildlife Area

FUNCTION	REVIEWER	DATE	COMMENTS (SEPARATE PAGES IF NECESSARY)
~~Envir. Impact~~	AS RLF	5-7	None
Parks & Rec.		5/18	Notes in text
Fish Mgt.		5/5	None
Forest Mgt.		5-15	None KAS
Last → Wildlife Mgt.	TB	5/21	
Park Planning	DR	5/5	See notes in margins, otherwise OK.
Real Estate	RA	5-18	Notes in text.
Office Dist. Dir.			

SECTION I - ACTIONS

GOALS, OBJECTIVES AND ADDITIONAL BENEFITS

Goal: To manage a state-owned wildlife area with emphasis on habitat preservation, fish and wildlife based recreation, and to provide other compatible recreational and educational opportunities.

Annual Objectives:

1. Maintain 800 participant days of hunting and trapping: 200 deer and bear, 300 waterfowl, 300 other small game and trapping.

2. Maintain 800 angler days for lake-run trout, smallmouth bass and northern pike fishing.

3. Protect a natural area for educational and scientific purposes.

Annual Additional Benefits:

1. Maintain 500 participant days of compatible other recreational and educational activities including hiking, cross-country skiing, photography and nature observation.

2. Contribute toward the habitat of resident and migratory nongame including endangered and threatened species.

RECOMMENDED MANAGEMENT AND DEVELOPMENT PROGRAM

The recommended management of the Mud Lake Wildlife Area will be one of resource protection while allowing compatible fish and wildlife based recreation. Protection of the area's wild character will meet the objectives of this plan, by limiting access through lack of further access development.

The property boundary should remain the same, with acquisition of remaining private lands as they become available. The approved acreage goal should be increased from 1860.50 acres to 2302.96 acres.

1060 acres surrounding Mud Lake should be designated as Scientific Area (S), with the remainder classified as Fish and Wildlife Development Area (RD_2), to allow for any future management opportunities.

All areas proposed for development will be examined for the presence of endangered and threatened wild animals and wild plants. If listed species are found, development will be suspended until the District Endangered and Nongame Species Coordinator is consulted, the site evaluated, and appropriate protective measures taken.

A complete biological inventory of the property will be conducted as funds permit. Additional property objectives may be developed following completion of such an inventory.

SECTION II - SUPPORT DATA

BACKGROUND INFORMATION

The Mud Lake Wildlife Area is located in northeastern Door County adjacent to Moonlight Bay. Mud Lake is a shallow, 155 acre drainage lake surrounded by an extensive second growth conifer swamp, and has an outstanding wilderness character. It is drained by Reiboldts Creek, which supports a lake-run fishery of trout, smallmouth bass and northern pike. Mud Lake is one of the few remaining natural waterfowl production areas in Door County, and receives significant use by migrant ducks, particularly during periods of stormy weather.

Mud Lake Wildlife Area was acquired by the State beginning in 1966. The major landholder was Leland Thorp, who owned 1040 acres surrounding the lake, and expressed a desire to sell his land to the state for preservation as wildlife habitat. Current state ownership is 1902.96 acres. The listed acreage goal of the property is 1860.50 acres with 2302.96 acres within the property boundary. While there is no leased land within the boundaries of the Wildlife Area, an easement of 1.52 acres exists on the west sides of the property. The Reiboldts Creek Public Access, totaling 121.00 acres and owned by Fish Management, borders the wildlife area on the south side.

On August 16, 1975, the Ridges Sanctuary-Toft Point-Mud Lake Area was dedicated as a National Natural Landmark by the National Park Service. Mud Lake, the adjacent Ridges Sanctuary, and nearby Toft Point all have areas included within their boundaries which have been designated as State Scientific Areas. 1060 acres of the Mud Lake Wildlife Area was designated as Scientific Area in September, 1975.

RESOURCE CAPABILITIES AND INVENTORY

Geology, Soils and Hydrology

The principal bedrock under most of Door County is Niagara dolomitic limestone, which is covered by varying depts of glacial till and outwash. On the Mud Lake Wildlife Area, the bedrock is covered by a thin soil layer over most of the property, although the bedrock is exposed in some areas on the bottom of Mud Lake. Glacial till in the form of outwash and lacustrine deposits is thickest on the northern, eastern and western edges of the property.

The property contains 21 soil types, which are consolidated into mucks, sands and loams. Approximately one half of the area is covered by muck soils of the Carbondale, Cathro and Markey series and silt loams of the Fabius and Yahara series cover the second largest area. The remainder of the soils present on the property are somewhat poorly to very poorly drained and nearly level, with saturated soil at or near the surface.

Sand and gravel for commercial purposes are excavated from pits adjacent to the property.

The most important hydrologic feature of the property is the Mud Lake-Reiboldts Creek drainage. Three unnamed streams empty into Mud Lake, and eventually southward into Moonlight Bay. Due to its close connection with Lake Michigan through Reiboldts Creek, Mud Lake is subject to the long-term water level fluctuations of Lake Michigan, and seiche activity in the lake occasionally causes Reiboldts Creek to flow northward for short periods.

Fish and Wildlife

Mud Lake and Reiboldts Creek together provide a spawning and nursery area for lake-run northern pike, smallmouth bass, carp and trout. Although the trout do not reproduce successfully in Reiboldts Creek, the spring run of rainbows is well known and highly utilized. The only information available on non-game fish species present is the results of a fyke net survey on April 30, 1981. Species taken in addition to those already mentioned include white sucker, bullhead and bowfin.

The large size and remoteness of the Mud Lake Wildlife Area contributes to the diversity of its fauna, providing habitat for many species, including those which require large areas, such as black bear, bobcat and coyote. Mammals classed as game animals which are present on the property include white-tailed deer, black bear and showshoe hare. Furbearers include coyote, red fox, bobcat, raccoon, muskrat, mink, beaver and skunk. Other mammals present are red squirrel, chipmunk and many other small mammals whose range extends into the region.

Game bird species present include ruffed grouse and woodcock. Waterfowl use the area in varying degrees, especially during migration times, when any of th ducks known from this area may be seen here. Duck species recorded as breeders include wood duck, mallard, and common goldeneye.

Nongame bird species have been surveyed on at least one Scientific Area's Breeding Bird Survey, and at least 36 species have been sighted on the area. The most common breeding species present are the red-winged blackbird and northern yellowthroat. Notable species present include the pileated woodpecker, and sharp-shinned hawk, which is not verified from this site but nests on the adjacent Ridges property.

Reptiles and amphibians reported for the area include painted turtle, garter snake, northern water snake, green frog, leopard frog, spring peeper and eastern toad.

Vegetative Cover

The vegetation covering the Mud Lake Wildlife Area is composed of four main cover types, with three other types occurring in small, isolated areas. The four main types are white cedar, lowland grass, lowland brush and grassland.. The white cedar/swamp conifer type occupies the largest area by far, occurring on nearly 1700 of the 2,302.96 acres within the Wildlife Area's boundaries. This type is dominated by white cedar, with various and mixtures of white birch, black ash, white spruce and balsam fir. It is entirely second growth, probably having been cut sometime in the early 1900's.

Lowland brush occupies the second largest area, and is dominated by alder, dogwood and willow shrubs. Most of this area is the result of flooding by beaver activity, which has killed the trees and favored the shrubs, which can withstand moderate flooding.

The grassland areas are abandoned agricultural fields which are currently dominated by Kentucky bluegrass, wild carrot and spotted knapweed. In some areas, trees and shrubs are beginning to invade these fields.

Lowland grass occurs primarily along the margin of Mud Lake. Included in this type is the emergent vegetation that occurs mostly along the shallow water edge of the lake, including hard-stem bulrush and wild rice. Proceeding shoreward, this type is dominated by areas of sedges mixed with cattail and local areas of giant reed grass. A zone of relatively pure bluejoint grass mixed with sweet gale and sage-leaved willow is present in the area adjoining the surrounding cedar swamp. In some areas, a dense zone of shrubs occurs along the margin, composed of alder, dogwood, and scattered bog birch and black alder. Locally, this contact zone contains many standing dead cedar and tamarack, probably the result of high water due to past beaver activity.

The three other cover types which occur on the area are northern hardwoods, aspen, and fir-spruce. These all occur on small areas and are limited in extent.

The cedar/swamp conifer and aspen types have management potential although most of the trees present in the cedar/swamp conifer types are small in size and not presently of commercial quality. Another problem associated with management on this area is the fact that a significant portion of these types are within the boundaries of the Scientific Area, precluding any harvest.

Endangered and Threatened Species

No endangered or threatened species of fish, amphibians, molluscs, mammals, birds, reptiles or wild plants are known to be present on the property. Endangered or threatened birds that are likely to use this area for feeding and resting during migration include the bald eagle, osprey, peregrine falcon, coopers hawk and red-shouldered hawk. Endangered or threatened plants which are known from adjacent Ridges Sanctuary and for which suitable habitat occurs on the property include tussock bulrush, selago-like spikemoss, beautiful sedge, dwarf lake iris, small round-leaved orchis and ram's-head lady's slipper.

Surface Water Resources

Mud Lake is a shallow, 155 acre drainage lake with a predominantly marl bottom. the maximum depth is 5 feet, and 55% is less than 3 feet deep. It is 1.35 miles long by 0.46 miles wide, with a total shoreline length of 3.2 miles and a shoreline development factor of 1.83. The Ph is 8.5, with a total alkalinity of 181 and a specific conductance of 324.

Mud Lake is drained by Reiboldts Creek, which has a length of 1 mile and a gradient of 5 feet per mile. Th Ph is 7.9 with a total alkalinity of 170 and a specific conductance of 315.

The largest of the three unnamed streams that enter Mud Lake has its outlet in the northwest corner of the lake. This steam is 2.7 miles long, with a gradient of 13.7 feet per mile. The Ph is 7.6, with a total alkalinity of 256 and a specific conductance of 495.

Historical and Archeological Features

No architectural, archeological or historical surveys have been made of this area. Thus, prior to any movement of soils or placement of structures to accomplish proposed objectives, the State Historical Society will be contacted for advice.

Ownership

The total state ownership within the wildlife area boundary is currently 1902.96 acres. The total acreage goal is 1860.50 acres, and Fish Management has 121.00 acres in the Reiboldts Creek Public Access which borders the wildlife area. Approximately 400 acres remain within the wildlife area boundary that are privately owned.

Current Use

Current use of the Mud Lake Wildlife Area is estimated to be 200 participant days of deer and bear hunting, 300 by waterfowl hunters, 300 small game and trapping, and 800 fishing. In addition, there are currently 500 participant days of compatible other recreational and educational activities such as hiking, snowmobiling, cross-country skiing, photography and nature observation.

Land Use Classification

Land use classification of the area should be divided into two categories - Scientific Area (S) and Fish and Wildlife Development Area (RD_2). The Scientific Area classification will cover the 1060 acres established as a State Scientific Area (Germain, et. al., 1977). Although there are no current plans for management, the classification of the remainder of the area as RD_2 allows for the possibility of future management practices that may enhance the value of the area for fish and wildlife based recreation.

MANAGMENT PROBLEMS

Beaver Control has been a problem in the past, in the form of flooding damage to the adjacent cedar swamp. Beaver are not currently a problem, but some control measures may be necessary in the future if it is determined that a problem exists.

Public Access has been and continues to be a problem. Difficulty in access through Reiboldts Creek, as well as a problem with private land

trespass on the eastern portion of the property, has raised questions regarding the need for further land acquisition. This problem can at least partly be solved by a clear marking of wildlife area boundaries.

Protection of the Scientific Area will remain as a priority in the management of the area. Due to the remoteness of the area and limited access available, few problems are anticipated in attainment of this goal.

Old home sites and junk piles are located in several areas scattered around the property as the result of past human habitation. Currently, these areas are unsightly and possibly dangerous. Proper management of these sites will be undertaken as funds become available.

ANALYSIS OF ALTERNATIVES

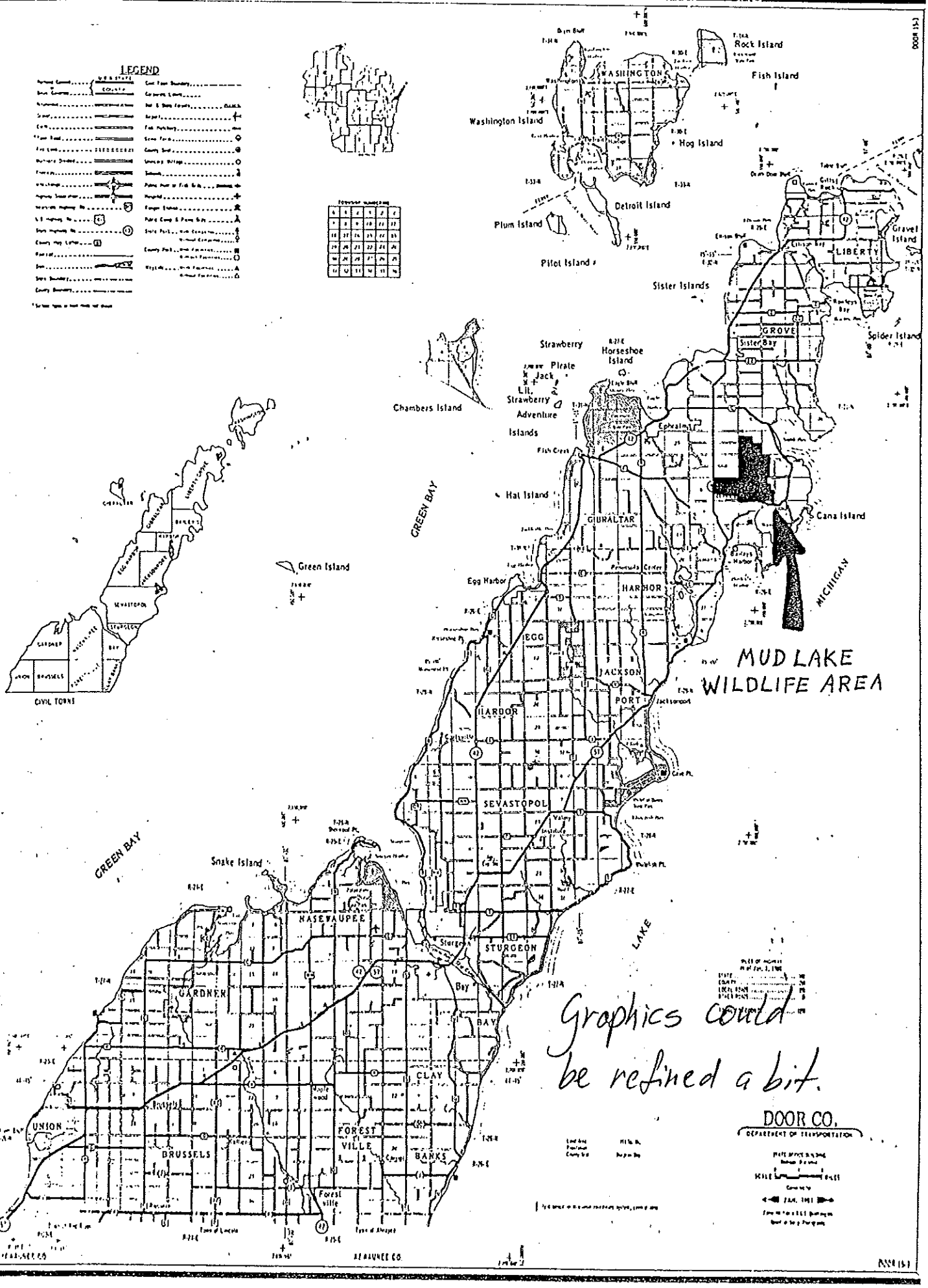
1. Status Quo: This action has occurred for at least the last 5 years. The property does not allow for significant development, and current ownership exceeds acreage goal.

2. Enlarge: The current acreage goal is 1860.5 acres. For uniformity and blocking, this should be raised to 2302.96 to include property within the existing boundary. Acreage would be acquired through fee title acquisition.

3. Reduce: The wildlife area is of minimal size now, and is dominated by a designated scientific area. Reduction in property size would further limit public access and restrict potential habitat management.

RECOMMENDED ALTERNATIVE ACTION

Increase the acreage goal from 1860.50 acres to 2302.96 acres while maintaining the existing property boundary.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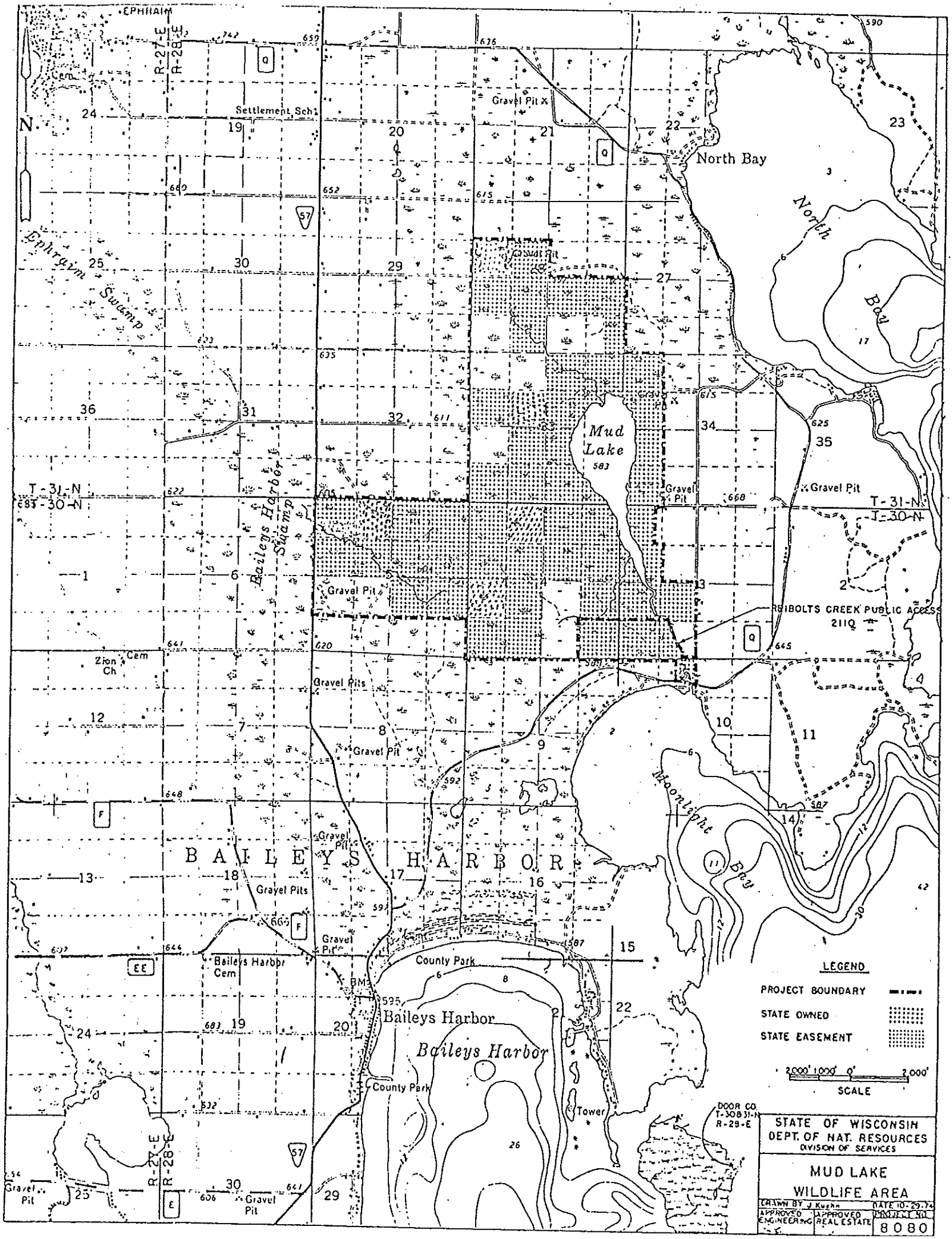
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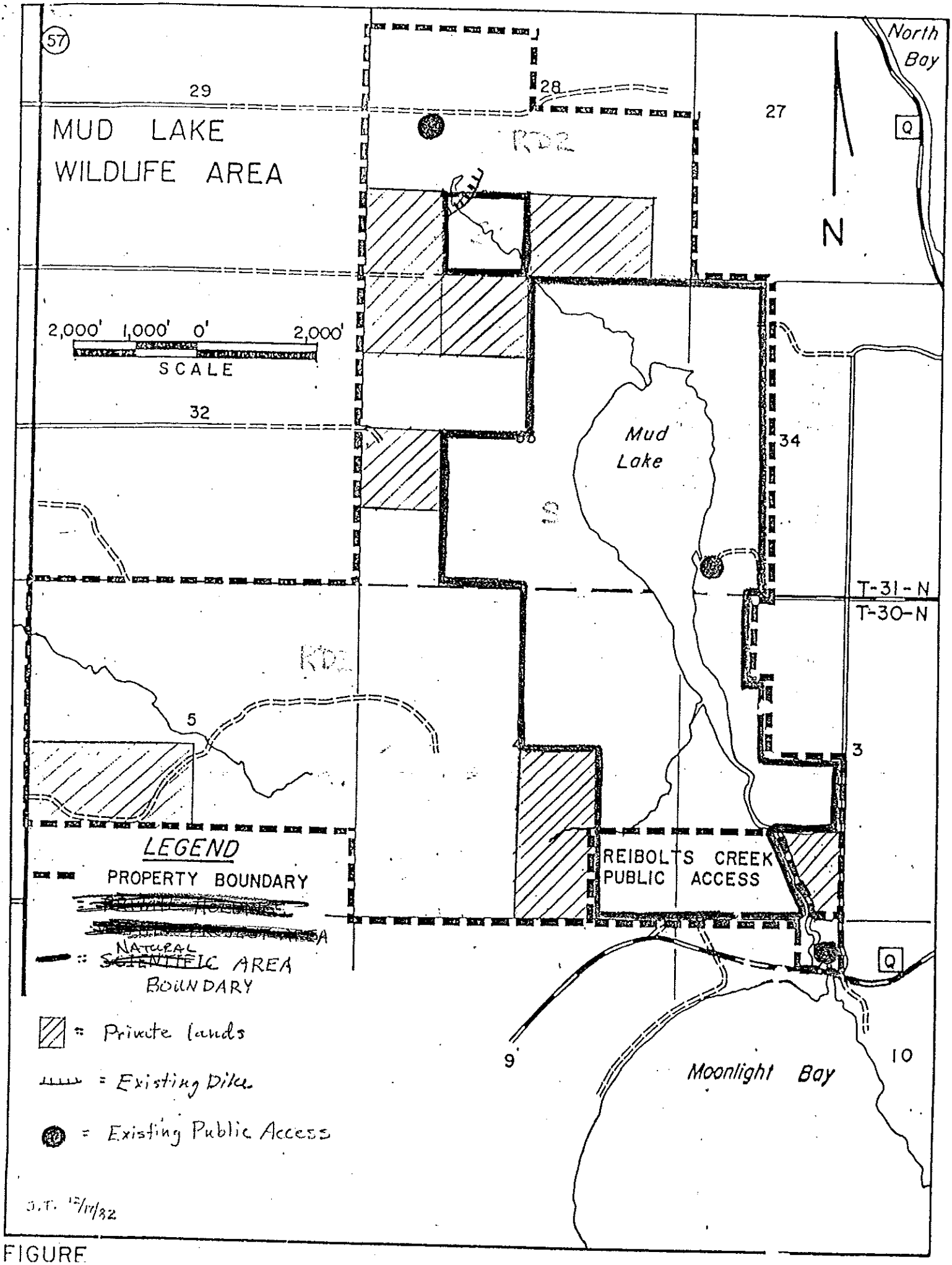
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FIGURE

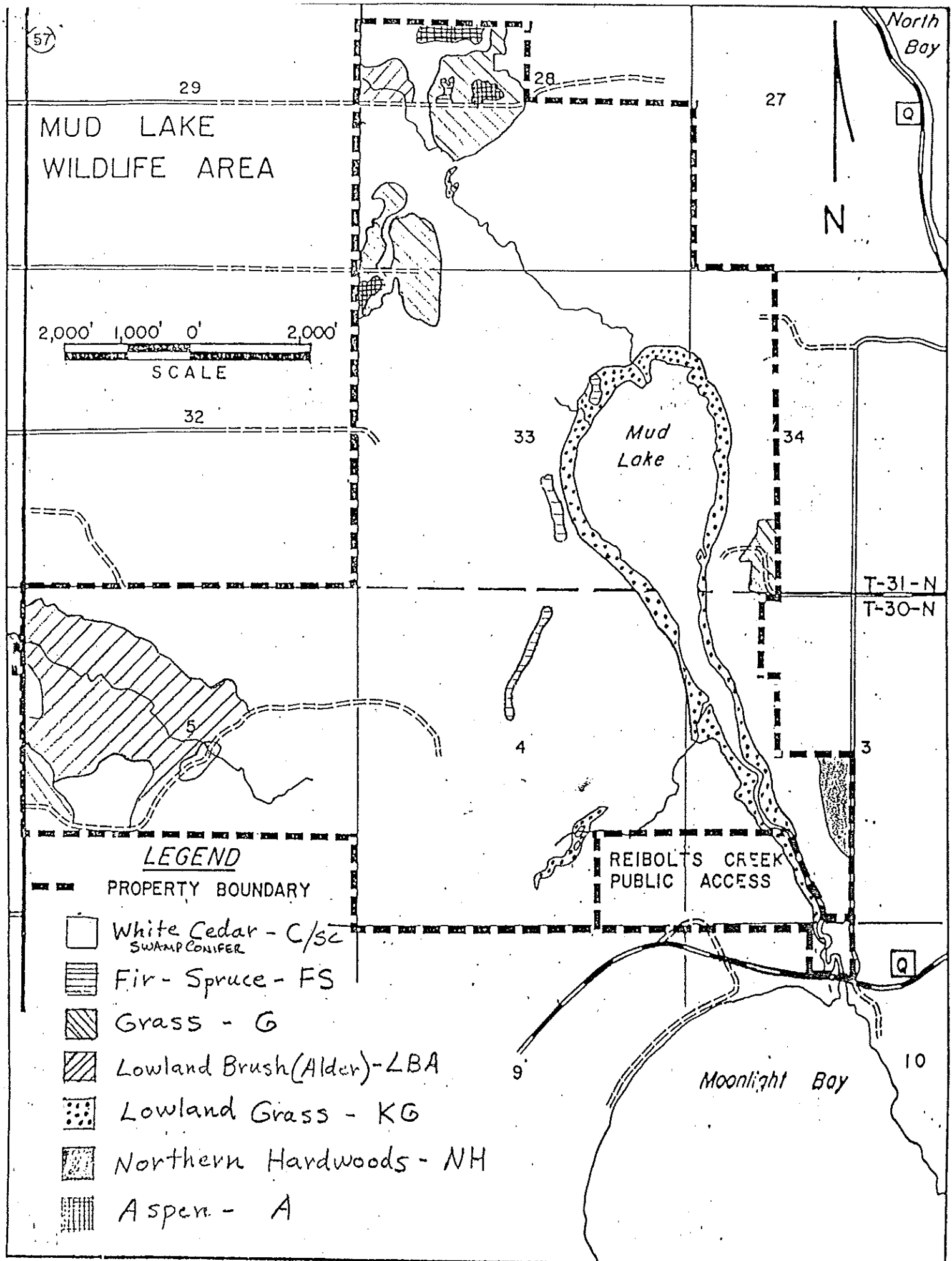


FIGURE Vegetation Cover

Scientific Area No. 125

Wisconsin Scientific Areas Preservation Council
Scientific or Natural Area Report

October 1968

Name of Area Mud Lake Inspection Date September 1973

Quarter NE County Door Twsp. 30, 31N Range 28E Sections

Boundaries and acreage of proposed or established area and buffer: 1060 acres in sections 33, 34, 3, 4. See attached map.

Access to area: From Bailey's Harbor, follow Highway 57 north 3/4 mile, then eastward on County Q about 2½ miles to Reibolt's Creek, then by canoe about 1 mile upstream to Mud Lake; or just across Reibolt's Creek follow Sunrise Road north 1.2 miles, then westward to an unimproved landing on Mud Lake.

Description of area: Outstanding features, primary and secondary biotic communities, dominants, understory and rare species, topography, soils, geology and archeology.

Mud Lake is a shallow (maximum 5 feet), 155 acre drainage lake surrounded by an extensive shrub and second growth timber swamp. The bottom type of Mud Lake is predominantly marl, although in some areas dolomite bedrock was observed. The area has an outstanding wild character. The presence of many old conifer snags and the current high water levels (1973) attest to the water fluctuations in the water table. Waterfowl use may be heavy, and on September 9 several mallards, wood duck, coot, and pie-billed grebe were observed. Beaver are active in the area and have dammed Reibolt's Creek between the Mud Lake outlet and Moonlight Bay. Aquatics are most diverse and abundant in the outlet stream and include burread, coontail, pondweed and wild rice. In the lake are softstem bulrush, yellow waterlily, and a pondweed, with giant reed, cattail, and waterlilies less common and localized. Carp are present but apparently not in nuisance unmbers. Mud Lake supports northern pike and small-mouth bass although it is listed as a freeze-out lake. Reibolt's Creek has been stocked with trout and likely supports a trout spawning run.

History of land use and limiting factors:

Fluctuating water level reduces the value of the timber swamp; however, this seems to be a natural condition for the lake and may be beneficial.

Administrative information: Land owner and administrator, existing and proposed management, degree of scientific, educational and recreational use of area, adjacent lands and compatibility.

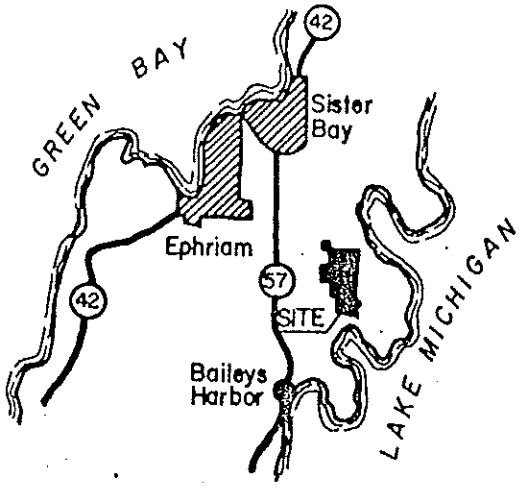
Owned and managed by the Department of Natural Resources: Bureau of Game Management Mud Lake Wildlife Area. In 1974, 960 acres surrounding Mud Lake were established as a National Natural Landmark. Ridges Sanctuary lands lie to the south, DNR and some private lands to the north and west, private lands to the east.

Reference information: person recommending area, references, quadrangle and other publications and date of action taken toward designation of area.

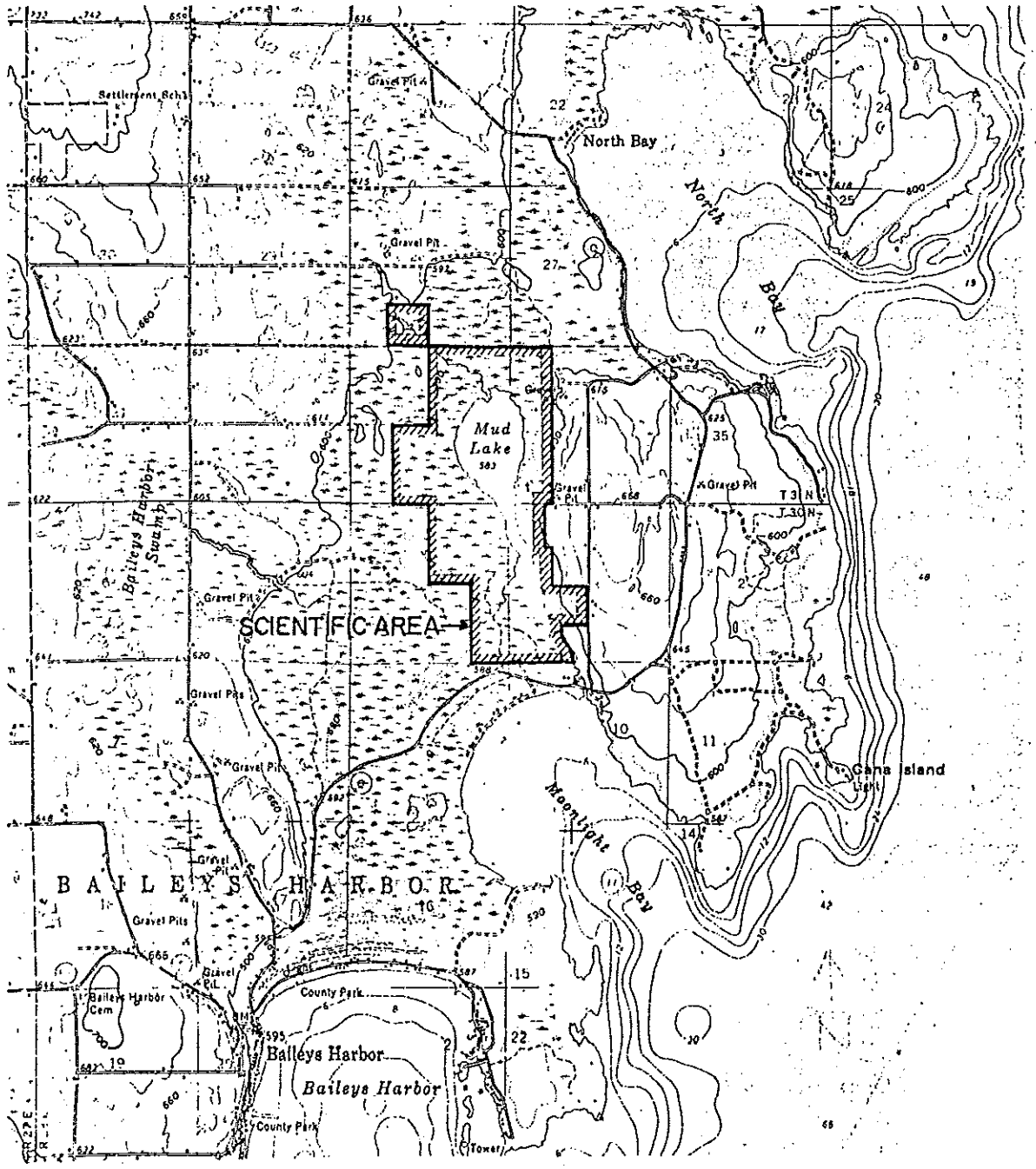
Recommended by C.E. Germain.
See Surface Water Resources of Door County, 1965; Sister Bay 15' Quadrangle
Established as a scientific area in September, 1975.

Rev. 3/71 Report by: C.E.Germain Date: September 15, 1973
(rev.) April, 1975

MUD LAKE SCIENTIFIC AREA



LOCATION MAP - *DOOR COUNTY*



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